

## ABSTRACT OF THE DISCLOSURE

With first, second and third current exchanger circuits cascaded, a current in proportion to a difference between an ambient temperature  $T_a$  and a reference temperature  $T_r$  is input to the first current exchanger circuit. The first current exchanger circuit  
5 supplies a current in proportion to the square of  $T_a - T_r$  to the second current exchanger circuit, the second current exchanger circuit supplies a current in proportion to the fourth power of  $T_a - T_r$  to the third current exchanger circuit, and the third current exchanger circuit outputs a current in proportion to the fifth power of  $T_a - T_r$ . Each of the first, second and third current exchanger circuits has a configuration which does not require a  
10 high supply voltage enough to drive a series circuit of three or more diodes.